



# Arctic Mixed-Phase Cloud Dissipation and its Relationship to Low CCN Concentrations

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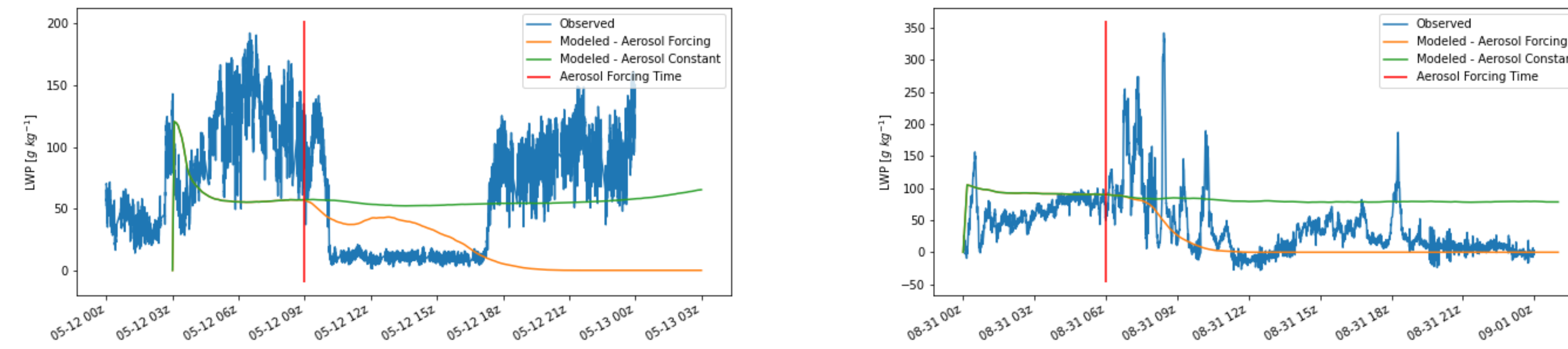
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## Overview

*Can a lack of environmental CCN/aerosol be a primary factor for Arctic cloud dissipation?*

- Persistent mixed-phase boundary layer clouds are important regulators for Arctic (and global) climate.
- Accurately modeling Arctic clouds are important to properly simulate the global climate system.
- Unlike in lower latitudes, Arctic aerosol concentrations have been hypothesized to be low enough to inhibit cloud formation
  - Mauritsen et al. (2011) coined the term "tenuous clouds" in which cloud structure was limited by aerosol concentration

## Simulation Results



## Cases and Simulation Setup

Two potential cases have been identified where cloud dissipation occurred coincidentally with a surface aerosol concentration decrease:

- Oliktok Point - May 12th, 2017
  - Northern slope of Alaska - ocean/land boundary
- ASCOS - August 31st, 2008
  - Arctic ocean ice floe

The plots below show radar reflectivity (a) and aerosol concentration (b).

